

NAVAL POSTGRADUATE SCHOOL

Monterey, California



THESIS

HUMAN RESOURCE ACCOUNTING (REPLACEMENT
COST) AND ITS COGNITIVE IMPACT ON
MANAGEMENT DECISIONS

by

Gary Thayne Davis

June 1974

Thesis Advisor:

Ronald S. Barden

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AND
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by

Gary Thayne Davis
Lieutenant, Medical Service Corp., United States Navy
B.S., George Washington University, 1972

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The Delphi technique was used to test the model and to elicit the opinion of a group of Navy managers concerning human resource management and replacement costs. It was found that there was limited personal knowledge about actual replacement costs of Navy personnel. Navy managers fail to grasp the concept of using replacement costs as a surrogate measure of the potential future utility of the human resource. The Navy manager's concern, therefore, appeared more intuitive and social rather than pragmatic and practical.

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I. INTRODUCTION

A. HUMAN RESOURCE THEORY

Human resource accounting is the process of identifying, measuring, and communicating information about human resources to facilitate effective management within an organization. In a particular organization, it involves measurements of the acquisition cost, replacement cost, and economic value of human resources, and their changes through time.¹

Corporate management has long suggested that the employees of an organization constitute a valuable resource. It has been only since the early sixties that any real attention has been given to developing a system to measure the value of the human resources to the organization. In his book, The Human Organization: Its Management and Value, Rensis Likert, Director of the University of Michigan's Institute for Social Research, suggests the need to develop a system of accounting for human resources and their changes in value through time.² Since that time some accountants such as Brummet, Flamholtz, and Pyle have become concerned over the potential impact of ignoring a resource as significant as human capital when making financial decisions. This concern and

¹ Brummet, R. Lee, William C. Pyle and Eric G. Flamholtz, "Accounting for Human Resources," Michigan Business Review, March 1968, pp. 20-25.

² Likert Rensis, The Human Organization: Its Management and Value, McGraw-Hill Book Co., N. Y., 1967, pp. 146-155.

that of many others has led to the development of a new field of inquiry in accounting called Human Resource Accounting (HRA).³

. At present there are three major objectives of HRA:⁴

1) Measurement: To develop valid and reliable models and methods for measuring the cost and value of people to organizations (including both monetary and non-monetary measurements).

2) Applications: To design operational systems to apply (implement) these measurement methods in actual organizations.

3) Cognitive and Behavioral Impact: To determine the behavioral impact of the human resource accounting measurements and framework on human attitudes and behavior (decisions and performance). The requirement for human resource cost and value has been discussed extensively during the past few years.⁵ The need for a theory of human resource value has received less attention.⁶

Recently, Flamholtz and Wright have argued that the concepts of human capital and human resource value will be the stimulus for a

³ Brummet, R. Lee, Eric G. Flamholtz and William C. Pyle, "Human Resource Measurement - A Challenge for Accounts," The Accounting Review, April 1968, pp. 217-224.

⁴ See Committee on Human Resource Accounting, The Accounting Review, Supplement to Vol. XLVII, 1973, pp. 168-184.

⁵ See James C. Hekimian and Curtis H. Jones, "Put People on your Balance Sheet," Harvard Business Review, (Jan-Feb., 1967), pp. 105-113; R. H. Hermanson, Accounting for Human Assets, occasional paper No. 14, Bureau of Business Administration Michigan State University, 1964; R. Lee Brummet, Eric Flamholtz, and William C. Pyle, "Human Resource Accounting: A Tool to Increase Managerial Effectiveness," Management Accounting, August 1969, pp. 12-15.

⁶ See Eric G. Flamholtz, "A Model for Human Resource Valuation: A Stochastic Process with Service Rewards," The Accounting Review, April 1971, pp. 253-267; "Toward a Theory of Human Resource Value in Formal Organizations," The Accounting Review, Oct. 1972, pp. 666-678.

new way of thinking about the management of people in organizations.

As Flamholtz has stated:

"At present, the management of human resources in organization is less effective than it might be because it lacks a unifying framework to guide it. Managers have neither a valid criterion to guide decisions affecting people nor a methodology for assessing the anticipated or actual consequences of such decisions... The notion of 'human resource value' seems to provide one possible solution to these problems. It can serve as the raison d'etre of human resource management: It can simultaneously provide the goal and criterion for the management of human resources. More specifically, the aim of human resource management can be viewed as the need to contribute to the value of the organization as a whole by optimizing the value of its human assets; the effectiveness criterion can be the measured change in the value of the organization's human resources."⁷

Flamholtz has argued that the notion of human resource value will lead to a new paradigm for managing people. Robert Wright has stated that the notion of capitalizing investments in human resources will also lead to a new way of thinking about managing man.

In his article, "Managing Man as a Capital Asset," Wright suggests:

"A new way of thinking about the human resource is emerging. It is apparent that this reconceptualization of the only vital factor of production will have a profound impact on the way managers manage. This new set of concepts is coming as an outgrowth of the design of accounting systems adequate to measure the cost of human resources and to report manpower as a capital asset."⁸

Wright argues that the accounting treatment of investments made in man as assets rather than as expenses will also cause management to recognize that people are truly assets possessing expected future benefits. Similarly, it will make managers more conscious of the intangible benefits created by investments in training.

⁷ See Eric G. Flamholtz, "A Model for Human Resource Valuation" A Stochastic Process With Service Rewards, " The Accounting Review, April 1971, pp. 253-267.

⁸ Wright, Robert, "Managing Man as a Capital Asset," Personnel Journal, April 1970, pp. 290-298.

The third objective listed for Human Resource Accounting, the cognitive and behavioral impact of human resource accounting, has failed to receive the attention due to this critical area. Several researchers have hypothesized that HRA will have an impact on management's actions and concept of the value of their human resources. Flamholtz has also suggested that it will have an impact on the attitudes of the people being valued.⁹

At present, there has been very little published to substantiate the claim that HRA improves management's decisions concerning their human resources. The purpose of this thesis will be to answer the question: Will the availability of measurements of the human resource replacement cost focus management's attention more toward decisions concerning their human resources and their value and cost?

B. THE PROBLEM

This thesis is a study designed and conducted as a partial test of the value of Human Resource Accounting, specifically, replacement cost and its cognitive impact on some of management's decisions. This study tests the validity of the assumption that replacement cost will impact on management decisions' concerning their human resources. Replacement cost is essentially a surrogate for economic value, for it refers to the cost of replacing a set of services expected to be rendered by an asset. One of the basic premises of HRA is that when human resource values are periodically measured and reported, managers will tend to

⁹ Ibid., Flamholtz, 1970.

become more concerned about the maintenance of the human assets for which they are responsible.¹⁰

Will a manager's decision concerning the human resource change with the additional information provided by an HRA replacement cost system? This premise should be viewed as a testable hypothesis rather than an arbitrary assumption. The problem of this thesis is to determine whether the additional data provided by HRA replacement cost will change managerial decisions.

1. Scope and Limitations

This study is intended to test experimentally the hypothesis relating to the value of human resource replacement cost to management decisions. This experimental hypothesis is derived from an article in the literature¹¹ relating to the value of human resource accounting. The ideal situation for such a test to be conducted would have been an experiment using actual replacement cost data in the Navy to make personnel decisions. The difficulty inherent in persuading a large Naval Unit to participate in such a project would have been very time consuming and expensive. The non-existence of any pilot studies upon which to construct such a field experiment necessitated that a limited laboratory experiment be conducted. While it is recognized that this experiment cannot conclusively prove the value of HRA replacement cost to managers, it should be considered a pilot study which can provide significant information for designing and conducting later field experiments.

¹⁰ R. Lee Brummet, Eric G. Flamholtz and W.C. Pyle, "Human Resource Myopia," Monthly Labor Review, January 1969, pp. 29-30.

¹¹ Ibid.

a. Experimental Hypothesis

When human resource replacement costs are measured and reported periodically, managers will tend to become more concerned over maintaining the highest quality of human assets at the lowest possible cost.

2. Model to be Tested

The basic model to be tested is shown schematically in Figure 1.¹² Since the replacement cost model will be used to test its value to the manager, the general elements of replacement cost will be reviewed in Chapter II and specific applications for a Navy model will be covered in Chapter III.

An actual model for human resource accounting, replacement cost, has never been developed for the Navy. Part of the research needed to test the value of such a system to a manager is to develop and test such a hypothetical model. For this thesis a hypothetical model drawn from data on Navy Officer and Enlisted personnel replacement costs has been developed and is shown in Chapter III.

C. RESEARCH DESIGN

To test the previously stated experimental hypothesis a Delphi technique was used.¹³ This technique was developed from a set of procedures originally developed by the Rand Corporation in the late 1940's. It was designed to obtain the most reliable consensus of

¹² Eric G. Flamholtz, "Human Resource Accounting: Measuring Positional Replacement Costs," Human Resource Management, Spring 73, pp. 8-16.

¹³ Dalkey, N. C. and Olaf Helmer, "An Experimental Application of the Delphi Method to the Use of Experts," Management Science, 1963, 9, pp. 458-467.

opinion from a group of experts.¹⁴ Interspersed with controlled feedback, a series of questionnaires concerning replacement cost of the Navy human resources was presented to each individual "expert." These procedures were designed to avoid direct confrontation of the experts with one another.

The author, as an intermediary, controlled the interaction among the experts; he gathered the data from the experts and summarized them along with the experts' answers to the questions. This method of controlled interaction among the experts attempted to avoid the disadvantages (such as role influence and inhibitions by junior officers in the presence of more senior officers) associated with more conventional use of experts such as in round table discussions.

There are a number of recognized shortcomings associated with using the Delphi technique. The potential impact of these shortcomings on the study was not tested. Among them are:

(1) The intermediary has an impact on the answers presented by the experts in the following rounds due to the form of the feedback given the experts to meet their inquiries for additional data. This is one price that must be paid for not allowing interaction among the experts.

(2) While the experts were asked not to discuss their responses with others in the group, this was very difficult to enforce after each session.

(3) The process of selecting the experts is often questioned due to the overlap of their knowledge and the question of whether they are in fact experts.

¹⁴ Ibid., p. 459.

The "experts" for this Delphi experiment were a group of mid-range Naval officers who were in their final quarter of postgraduate education in Management at the Naval Postgraduate School, Monterey, California. These officers all had a broad range of experience and training from command at sea to pilots, engineers, supply officers, department heads, and division officers. In these roles they have managed human resources. For this reason they were selected as the "experts" because their opinions and observations are representative of Navy managers.

The site of this experiment was at the Naval Postgraduate School, Monterey, California. The experiment was conducted in April, 1974.

II. HUMAN RESOURCE ACCOUNTING REPLACEMENT COST

This chapter deals with the problem of measuring the replacement cost of human resources. It focuses upon measuring the cost of replacing individuals occupying specified positions, and the cost of creating new positions. Its specific objective is to develop a normative model for the measurement of positional replacement costs. This chapter will describe an application of a replacement cost model in a general format, while the next chapter will deal specifically with the Navy. It will examine selected positions and their replacement costs and consider the implications of their measurement for accounting and management.

The individual has been selected as the basic unit of study for two reasons. First, individuals are a central focus for much organizational decision-making, such as selection, training, placement, and promotion. It is hypothesized that measures of their cost and value will help enhance the effectiveness of these decisions. The second reason for focusing upon individuals rather than on groupings of people (such as

departments or units) is that measures of individual cost and value may, at least in principle as a simplified first step, be aggregated for larger units of people. However, the whole is rarely the sum of the values of the parts. It would be very difficult to disaggregate the cost or value of entities such as the total human organization, divisions, departments, units, or even work groups into their basic human components, which are individuals.

A. NATURE OF REPLACEMENT

Although the term "replacement cost" has been discussed extensively in accounting literature, it remains ill-defined. In his classic treatise, The Valuation of Property, James C. Bonbright stated what has become a commonly held notion of replacement cost: "in its most useful sense, the replacement cost of property means the cost that would be incurred by an actual or potential owner in acquiring an acceptable substitute property."¹⁵ Unfortunately, the meaning of the term "an acceptable substitute property" is neither obvious nor operationally useful.

More recently, Solomons has implicitly raised the key question concerning the proper concept of replacement cost. In his discussion of economic and accounting concepts of cost and value, he asks the rhetorical question: "Is the replacement cost of a used asset the cost of replacing it with a new one or an equivalent used one?"¹⁶ By asking

¹⁵ Bonbright, James C., The Valuation of Property, Vol. 1, New York, McGraw Hill Book Co., Inc., 1937, p. 152

¹⁶ Solomons, David, "Economic and Accounting Concepts of Cost and Value," in Morton Backer (ed.), Modern Accounting Theory, Englewood Cliffs, N. J., Prentice-Hall, Inc., 1966, p. 30.

this question, Solomons implies that there is a single, "correct" concept of replacement cost for all purposes, and also suggests that the appropriate concept involves a choice between the cost of replacing an asset new or the cost of an equivalent asset. However, by posing such an "either-or" question, Solomons provokes the thought that perhaps there is not a single, correct concept of replacement cost; rather, to determine the appropriate concept of replacement costs, perhaps one must know its intended purpose or proposed use. This rationale is analogous to that proposed by the Committee to Prepare a Statement of Basic Accounting Theory in choosing between different cost concepts, such as historical versus current costs.

"Historical transaction-based information has been verified by a market transaction, and hence is of great usefulness when verifiability is emphasized. Current values, on the other hand, reflect not only the transactions of the firm but also the impact of the environment of the firm beyond the completed transactions. They thus possess a high degree of relevance for many uses in which prediction is prominent."¹⁷

Thus the committee concluded that the appropriate concept of cost depends upon the purpose or use of that construct.

The appropriate concept of replacement cost thus depends, in a particular instance, upon the intended purpose for which the measure is sought. For valuation purposes, the cost of acquiring an equivalent substitute seems to be most relevant. This concept of replacement cost is essentially a surrogate for economic value, for it refers to the cost of replacing a set of services expected to be rendered by an asset. However, for budgeting or other planning purposes, the "anticipated"

¹⁷ Committee to Prepare a Statement of Basic Accounting Theory, A Statement of Basic Accounting Theory, Evanston: The American Accounting Assoc., 1966, p. 30.

or "expected" cost of replacing an asset seems to be the relevant concept. In practice differences can occur between the cost of an equivalent substitute and the actually expected or anticipated replacement cost because it may not be necessary, desirable, or feasible to acquire an equivalent replacement.

In this thesis, the generic term "replacement cost" is thus defined for valuation purposes as the sacrifice that would have to be incurred today to acquire a substitute capable of rendering a set of services equivalent to that provided by a resource presently owned or employed. For budgetary planning and management purposes, it is defined as the sacrifice that is expected to be incurred today to acquire the anticipated replacement for a resource presently owned or employed. The replacement does not necessarily have to provide a set of services equivalent to the resource presently owned or employed.

B. NATURE OF POSITIONAL REPLACEMENT COST

The idea of "human resource replacement cost" is derived from the generic concept of replacement cost. In principle, it can be extended to individuals, groups (such as departments), and to the human organization as a whole. As a surrogate for an individual's value, replacement cost would be defined as the sacrifice that would have to be incurred today to acquire a substitute capable of rendering a set of services equivalent to that of the person presently employed.

At present, an individual's replacement cost is not often measured in organizations. Personnel managers typically think in terms of acquiring a substitute capable of rendering a set of services in a specified position, rather than in terms of replacing an individual *per se*.

They are mainly concerned with budgeting for the costs of acquiring a replacement rather than with measuring an individual's value. Thus, they are primarily concerned with positional rather than individual replacement costs.

"Positional replacement cost" refers to the sacrifice that would have to be incurred today to replace an individual in a specified position with a substitute capable of providing an equivalent set of services in the given position. It refers not to the cost of replacing a given individual but to the cost of replacing the set of services required of any incumbent in a specified position.¹⁸

C. A MODEL FOR REPLACEMENT COST

The measurement of positional replacement costs requires identification of the costs which have to be incurred to replace a position holder with a substitute capable of rendering an equivalent set of services in the given position. This should include both the out of pocket and opportunity cost which must be incurred. It should include indirect as well as direct costs. Such an arrangement is shown as a flow diagram in Figure 1. It prescribes the elements of replacement cost which ought to be measured, assuming that it is feasible to obtain such data. As shown in Figure 1, there are three basic elements of positional replacement cost:

- (1) Acquisition costs
- (2) Learning costs
- (3) Separation costs

¹⁸ Flamholtz, Eric G., "Human Resource Accounting: Measuring Positional Replacement Costs," Human Resource Management, Spring 73, pp 8-16.

Model for Measurement of Human
Resource Replacement Costs

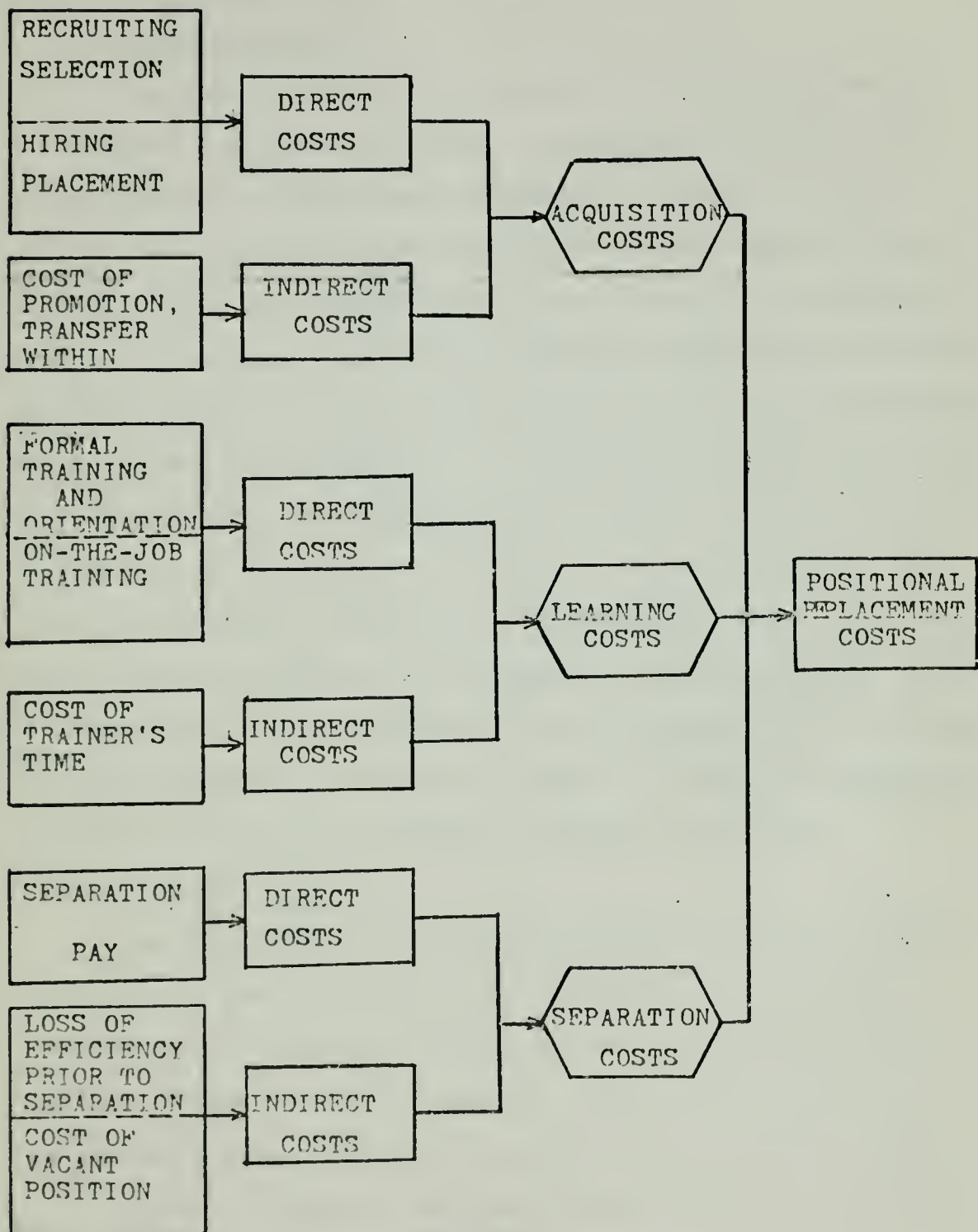


FIGURE 1

Each of these elements has both direct and indirect components, and may include opportunity as well as out of pocket costs.

1. Acquisition Costs

Acquisition costs refer to the sacrifice that must be incurred to "acquire" a new position holder. It includes all of the direct costs of recruiting, selecting, hiring, and placement as well as certain indirect costs. An indirect acquisition cost that can be incurred is the cost of promotion or transfer from within. This can be viewed as the cost that is incurred when one position holder is used to replace another. Except in entry level positions where replacements are typically obtained from outside the organization, a vacancy in a given position may create an interactive chain of vacancies and replacements. For example, the loss of a department head may result in the promotion of one of the division officers who in turn may be replaced by one of the other officers in the division. Ultimately, the organization will very probably receive a replacement for the junior officer who was promoted to fill the vacancy indirectly created by a higher level vacancy. The cost of acquiring this replacement is a cost of promotion or transfer from within.

2. Learning Costs

In addition to the acquisition costs incurred, costs must also be incurred to train the replacement and bring him to the level of performance normally expected from an individual in that particular position. These are costs of learning. They include the direct and indirect costs incurred in formal orientation and on-the-job training.

Learning costs are operationally defined as the costs incurred while an individual achieves the level of productivity that is normally expected in a given position. The indirect cost incurred during the

learning period may include the cost of lost performance of others in addition to the trainee. Such an opportunity cost may result because the interaction of others with the trainee during his learning tends to decrease their productivity.

3. Separation Costs

The third element of position replacement cost is separation costs. This is the cost of separating the present position holder.

During a period of searching for a replacement, an organization may incur an indirect cost of acquiring a new position holder because the responsibilities of the vacant position are not being performed or "covered" by the remaining personnel. If performance in one position has an impact upon performance in other positions, holders of the latter may perform less effectively when the former is vacant.

Another element of separation costs is the cost of lost productivity prior to the separation of an individual from the organization, assuming that there is a tendency for performance to decrease at such a time. In the Navy this lost productivity is recognized by the term "short timer" and is a recognized fact of life.

D. STANDARD VERSUS ANTICIPATED COSTS

The magnitude of these three elements of positional replacement cost can be significantly influenced by the availability of natural substitutes, the availability of persons in the positions from which replacements are typically selected. For entry level positions, replacements are usually obtained from outside the organization. For higher level positions, substitutes may typically be sought from one or more lower level positions or outside the organization. The magnitude of the cost of replacing an individual in a given position may differ according

to the source of the replacement. For example the training required by a Division Officer in replacing a Department Head will exceed the training required as an officer of the department. This suggests that measures can be developed for both the standard positional replacement costs and anticipated positional replacement costs.

A standard positional replacement cost refers to the cost to replace an individual assuming he is replaced by the natural or most desirable substitute. An anticipated positional replacement cost refers to the cost actually anticipated to be incurred in replacing an individual by the best available substitute. The difference in standard positional replacement cost can sometimes be attributed to the degree of effectiveness of manpower planning such as the replacement time factor planning in an organization.

E. HUMAN RESOURCE PLANNING AND CONTROL

Measures of positional replacement costs can play a significant role in budgeting manpower requirements, controlling personnel acquisition, learning and separation costs, and in evaluating the effectiveness of manpower planning policies and practices.

The process of personnel planning involves forecasting not only the number of people required in various staff classifications, but also in estimating the monetary cost of recruiting, selecting, hiring, and developing manpower resources in terms of a personnel budget. Anticipated and standard positional replacement costs can facilitate the preparation of such budgets.

In addition, standard positional replacement costs like all standard costs, can help control personnel costs if they are used in personnel

planning. Thus the personnel function in organizations can be treated as a cost-center, with standard costs to act as criteria for cost control in budgets and planning.

F. IMPLICATIONS FOR ACCOUNTING

The primary job of the accountant in dealing with positional replacement costs is to put the data in a form that can be communicated to other members of management so that they may use the data as previously described. Since it is possible to anticipate much criticism for the use of replacement cost the accountant must ensure that his data is as objective and accurate as possible.

It has been suggested to the author that if a position holder is aware of his replacement cost, he could ask for a high pay raise and expect to get it, if his salary be less than his replacement cost. While this may be true, the manager's decision should have no bearing on whether the employee had this knowledge or not. Most employees already have an "intuitive" knowledge of their value to the organization. Thus by formalizing this information the manager's decision could be based on factual data rather than on what he thinks the employee is worth.

III. REPLACEMENT COST MODEL FOR THE NAVY

In dealing with Human Resource Accounting, it is paramount to remember that one is dealing with the investment aspects and not the expenses. For example, the pay and allowances paid to the member during training is part of the investment, while pay during normal service is still an expense. When human assets are acquired by the

Navy, costs are involved. When these human assets are trained, formally or informally, this is accomplished at a cost. These costs are incurred only in the expectation of some future contribution by that individual during his service life.

It was implied earlier that: A manager's decision concerning the human resource will be improved with the additional information provided by an HRA replacement cost system. According to Krauss,¹⁹ the assumption that decision making will improve as more information is made available to the manager may be faulty. First, more information of the wrong kind will not help. Second, the presence of more information must be relevant to the decisions the manager must make. At present much of the data on personnel replacement cost is not readily available to the Navy Manager.

Creating management interest in HRA replacement costs would require a policy change in the responsibilities for the management of the human resources. Most Navy Managers have heard that 48% of the Navy's current budget is personnel costs. However, they might be more surprised to learn it has been estimated that about 9% of the Navy's FY-75 budget will be for training costs.²⁰ What effect do these training costs have on the operational manager? At the present time, none, unless the area of operation happens to be training. In order to make HRA replacement costs a viable concept, responsibility must be placed on the operational manager for the untimely replacement of

¹⁹ Leonard I. Krauss, Computer-Based Management Information Systems, American Management Association, Inc., 1970, p.42.

²⁰ R.A. Stephan, Military Manpower Reductions, INS 57-72 Center for Naval Analyses, Arlington, Virginia, Jan. 1972.

his human resources. For example, suppose a Navy Manager has in his command a qualified and highly motivated officer, who due to poor leadership leaves the Naval service long before he may have. Should this command's personnel budget be charged for the replacement cost of this officer? If the manager were evaluated by his superior officer on how he managed his human resources perhaps his management would improve.

In dealing with replacement cost we are dealing with investments made in the past in order to help with decisions in the future. If we have a picture of the future we can plan for it accordingly. As the Danish philosopher Soren Kierkegaard said over a hundred years ago, "Life can only be understood backwards; but it must be 'explicitly evaluated' forwards."²¹

A simplified model for HRA replacement cost in the Navy appears in Figure 2.²² This figure should be helpful in understanding the remaining sections of this chapter.

First, it must be decided whether a particular personnel cost should be classified as an investment or an expense. Investments have been divided into two categories: Pre-commissioning investments and post-commissioning investments. They relate to the earlier model for acquisition and learning costs. A further breakdown of these costs has been made for functional accounts. While the terms used in this model

²¹ Ibid., Krauss, p. 44.

²² Adapted from a model by R. Lee Brummet, Eric G. Flamholtz and William C. Pyle, "Human Resource Measurement-A Challenge for Accounts," The Accounting Review, April 1968, and applied to Navy by Arthur H. Anderssen, "Preliminary Design of a Human Resource Accounting System for the Navy," Massachusetts Institute of Technology, 1972.

NAVY HUMAN RESOURCE ACCOUNTING MODEL

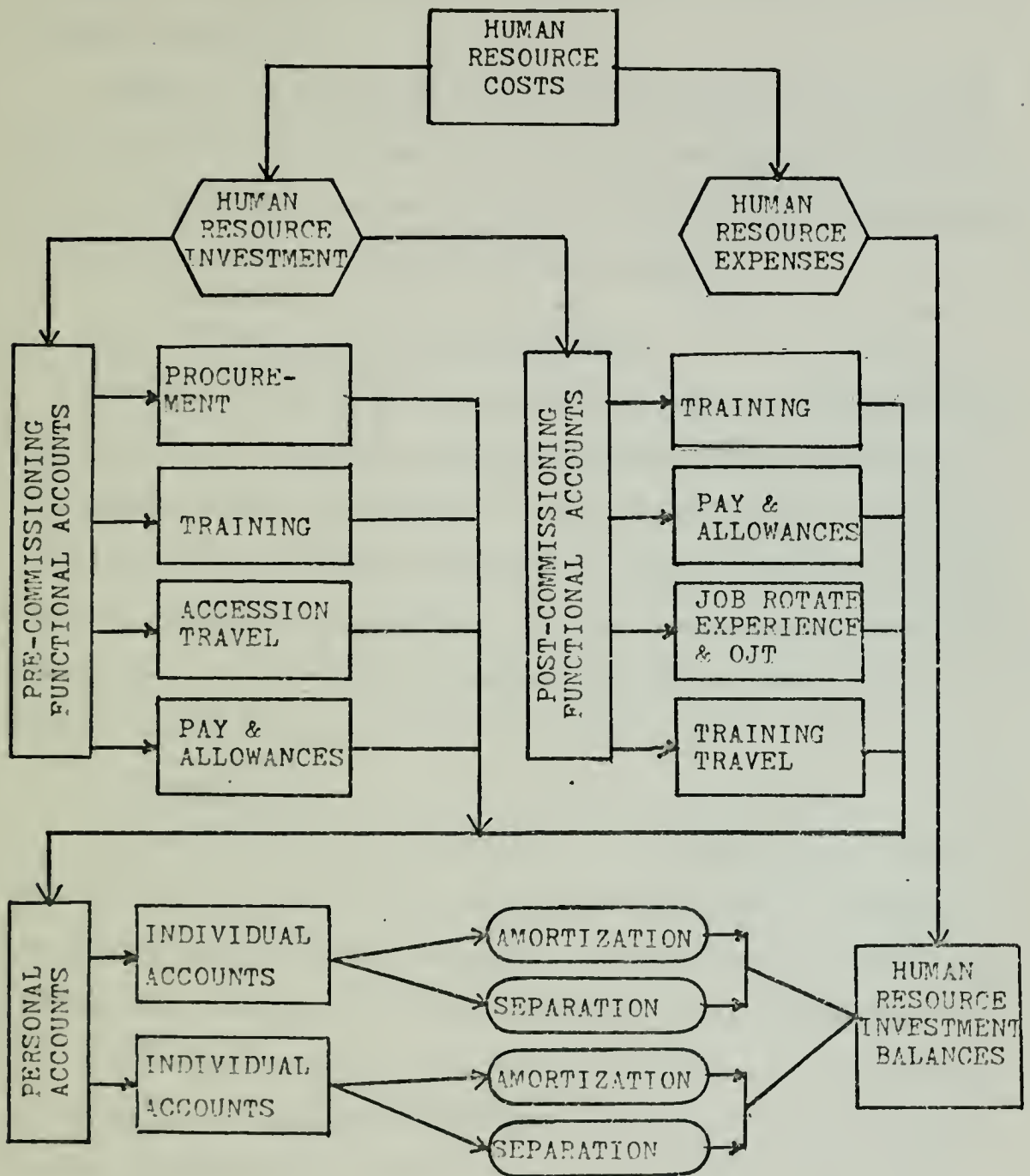


FIGURE 2

are different from the general model in Chapter II, they were used to conform with the terms used in the existing body of officer personnel costing literature.²³

Table 1 is a fact sheet showing representative, relative cost data for four pre-commissioning programs. It should be pointed out that total cost figures are not current but maintain the relative relationships. Current cost data was not available to the author.

A. PRE-COMMISSIONING INVESTMENTS

The funds expended on potential officers prior to their commissioning are spent in anticipation that the candidates will be commissioned and provide some useful service. In this respect, pre-commissioning costs should be considered investments through the period of obligated service following commissioning. Most pre-commissioning investments (per capita costs) have been identified in existing studies, but are now out of date and are unavailable at this time.²⁴

1. Procurement

Recruiting future Naval officers is not without cost. Procurement dollars are spent with the expectation that a portion of those candidates considered will be accepted and provide some useful service during their employment. In this respect, the total recruiting cost would be allocated among the successful candidates. The procurement costs include all expenses attributable to officer procurement such as salaries of personnel involved in officer procurement, travel and

²³ Naval Personnel Research and Development Laboratory, Officer Personnel Costs, WOS-71-4, Washington, D. C., March 1971.

²⁴ Ibid., p. 7.

PRE-COMMISSIONING
FACT SHEET*

a. Naval Academy

| <u>Pre-Commissioning Costs</u> | | <u>Total Costs</u> |
|--------------------------------|--------|--------------------|
| Procurement | \$ 35 | |
| Travel | 700 | |
| Pay & Allowances | 14,400 | |
| Training | 55,000 | <u>\$70,435</u> |

b. NROTC Non-Scholarship

| | | |
|------------------|-------|-----------------|
| Procurement | 50 | |
| Travel | 200 | |
| Pay & Allowances | 2,000 | |
| Training | 6,500 | <u>\$ 8,750</u> |

c. NROTC Scholarship

| | | |
|------------------|--------|------------------|
| Procurement | 50 | |
| Travel | 700 | |
| Pay & Allowances | 5,000 | |
| Training | 15,000 | <u>\$ 27,500</u> |

d. Officer Candidate School

| | | |
|----------------------------------|-------|-----------------|
| Procurement | 1,400 | |
| Travel (Included in Procurement) | 0 | |
| Pay & Allowances | 1,800 | |
| Training | 4,700 | <u>\$ 7,900</u> |

* These costs are representative only being based on limited historical data. For example, one source gives the Naval Academy costs for FY-73 as \$ 54,200, however, information was not provided as to what this cost includes.

TABLE I

per diem of such personnel, vehicle costs, office rentals and advertising. The average cost of procurement (FY-71) for OCS was \$1,408.²⁵ Being an average cost there is no way to report procurement cost differentials between programs. Procurement costs of \$35 and \$50 for Naval Academy and NROTC respectively are Bureau of Naval Personnel estimates.

2. Accession and Training Travel

Accession travel includes movements from home or recruiting station to a training center and to the first permanent duty station after initial training. The first permanent duty station may be an operational billet or a school of 20 weeks or more duration. Training travel consists of movements on permanent change of station orders for duty under instruction at a school or installation for a period of 20 weeks or more, except when the school or installation is the member's first permanent duty station.

3. Pay and Allowances

While undergoing pre-commissioning training, a potential officer receives basic pay. Depending upon the program, he may also receive subsistence in kind and a clothing allowance.

4. Training

Once an officer candidate has been selected, additional investments are made prior to sending him to his first assignment. Various programs and institutions such as the Naval Academy, NROTC, and OCS are maintained to provide officers with prerequisite training and education.

²⁵ Ibid., p. 7.

B. POST-COMMISSIONING INVESTMENT

After an officer has been commissioned, the Navy continues to make investments in him. The training and education the officer receives in pre-commissioning are only the beginning. The Navy has many technical schools. It also finances post-graduate work for many of its officers. The Navy makes heavy investments in flight and submarine training. In addition, much of the time a young officer spends on the job is spent in gaining experience and knowledge which will contribute to his future performance. Through job rotation, the officer is acquainted with a variety of technical and managerial experience, (on the job training) which should aid him in future periods.

1. Training

The schools maintained by the Navy are representative of a significant investment in human resources. A variety of costs are involved in their operation. Instructors must be paid, supplies must be furnished, and equipment and buildings must be purchased and maintained. Even when private educational institutions are used, tuition and book allowances are involved. Table 2 is a sampling of course costs which may be applied to the per capita worth of the officer. The costs in Table 2 were derived from the per capita cost of training for Fiscal Year 1971 as prepared by the Bureau of Naval Personnel.²⁶ Indirect costs have not been allocated for these training costs. One reason for this may be the lack of agreement as to what costs should be allocated.

²⁶ Ibid., Officer Personnel Costs, p. 7.

OFFICER COURSE COSTS

| <u>COURSE</u> | <u>NO. WEEKS</u> | <u>COST*</u> |
|------------------------------|------------------|--------------|
| Communications Officer Fleet | 15 | \$1,100 |
| Damage Control, Applied | 4 | 400 |
| Deep Sea Diving Officer | 21 | 6,000 |
| Electronics Officers Maint. | 34 | 4,200 |
| Main Propulsion Assistant | 12 | 1,600 |
| TARTAR Weapons Officer | 13 | 2,000 |
| Conventional Submarine | 24 | 3,000 |
| Nuclear Power School | 24 | 1,800 |
| Nuclear Power Training Units | 26 | 5,000 |

* These are direct costs and do not include pay and allowances or transportation. These costs are based on data from WOS-71-4, Officer Personnel Costs.

TABLE 2

2. Pay and Allowances

While an officer is a student he receives his normal pay and allowances. While in a student status, his services are lost to operational billets. These costs are added to his replacement cost account.

3. Job Rotation, Experience and OJT

When personnel are transferred to new jobs, additional expenditures are incurred. Many of these are indirect costs. After reporting to a new job or command, the individual may attend a formal orientation program. He will spend a significant portion of his time, at first, familiarizing himself with command regulations, objectives, and mode of operation. Currently these costs are not allocated to training costs. This allocation is essential to developing an acceptable replacement cost model for the Navy.

4. Job Rotation and Training Travel

Travel costs are generally involved when an individual is ordered to a new job or school. Per diem may also be paid. From all information available it would appear that travel for training is not included in training costs.

C. AMORTIZATIONS AND SEPARATION

The concept of amortization of the human resource may be a viable one, and was considered by Anderssen in his thesis²⁷ If one is really interested in the "book value" of the human resource then amortization over a period of time should be used. If amortization were used in the replacement cost model, then to replace a person after twenty or thirty years (the average service life of a career service person after

²⁷ Anderssen, Op. Cit., p. 23.

serving the initial obligated service) then the replacement cost should be reduced to zero when the person leaves the service. If a person leaves before the end of his service life, then there would be a large write off.

Separation costs are the cost of separating the present position holder. If a person leaves the service voluntarily after four years or the end of his obligated service, the only direct cost involved in this separation would be his travel pay home and allowances due him. On the other hand involuntary separation may be due to a number of reasons: Hardship, medical disability, the result of a court martial, and failure to be promoted (twice passed over for LCDR). Some of these require payments, while others do not.

Some of the indirect costs of separation may be lowered organizational performance when the position is not filled right away. (This indirect cost does not seem to be recognized by most Navy managers at this time.) There may also be a cost attributed to the separation created by the position holder prior to his actual separation while he has what is known as a "short timer's attitude."

D. DIFFERENCES IN REPLACEMENT COSTS

Table 3 points out the differences in the total investment costs attributed to individuals. It is a sample of the cost comparisons for four programs available to the four officer inputs discussed earlier, (this does not imply that these are the only programs available, but rather a small sample).²⁸

²⁸ Officer Personnel Costs., Op. Cit., p. 10.

SURFACE, SURFACE NUCLEAR POWER AND SUBMARINE
NUCLEAR POWER PROGRAM COST COMPARISONS

| Program | Obligated Service (Years) | Pre-Com ¹ Cost | Post-Com ² Cost | Total Costs |
|--------------------------------|---------------------------------|------------------------------|-------------------------------|----------------|
| <u>SURFACE SHIP</u> | | | | |
| NAVAL ACADEMY | 5 | \$70,435 | \$40,000 | \$140,435 |
| NROTC-Regular | 4 | 27,500 | 55,000 | 82,500 |
| NROTC-Contract | 3 | 8,750 | 40,000 | 48,750 |
| OCS | 3 | 7,900 | 40,000 | 47,900 |
| <u>SURFACE NUCLEAR POWER</u> | | | | |
| NAVAL ACADEMY | 6 | 70,435 | 77,000 | 147,435 |
| NROTC-Regular | 6 | 27,500 | 77,300 | 104,800 |
| NROTC-Contract | 5 | 8,750 | 60,000 | 68,750 |
| OCS | 5 | 7,900 | 60,000 | 67,900 |
| <u>SUBMARINE NUCLEAR POWER</u> | | | | |
| NAVAL ACADEMY | 6 | 70,435 | 85,000 | 155,435 |
| NROTC-Regular | 6 | 27,500 | 85,000 | 112,500 |
| NROTC-Contract | 5 | 8,750 | 70,000 | 78,750 |
| OCS | 5 | 7,900 | 70,000 | 67,900 |

Note: ¹ Pre-Commissioning costs are estimates for FY-75 and explained in Table 1.

² Post-Commissioning costs are based on FY-71 data and increased to represent current costs. These costs should be viewed as a sample and representative but not actual cost data. The differences in costs for the four programs can be partly explained by the length of obligated service and the addition of certain bonuses for some programs. It has also been estimated that a longer period of OJT is required for an officer commissioned through a program other than the Naval Academy. However, this generality may be true only if the duties assigned were not related to prior training and experience.

TABLE 3

From this example an officer procured through the Naval Academy has the highest replacement cost. While it is obvious that more costs are involved, it should also be pointed out that the initial period of obligated service is longer for officers from the Academy. Another consideration is that a higher percentage of officers from the Naval Academy remain in the service for twenty or thirty years allowing a longer period of amortization.

IV. DELPHI SURVEY

A. INTRODUCTION TO SURVEY

On 17 April 1974, a Delphi study was conducted at the Naval Post-graduate School, Monterey, California on a panel of eighteen "experts." This panel was comprised of Naval officers in their final quarter of graduate studies in Management. This study was conducted to determine whether the periodic measurement and reporting of human resource replacement costs would impact on the Navy manager's decision concerning his human assets. A side benefit of the study was to ascertain the opinions of the panel concerning human resource accounting replacement costs, and to determine whether this panel could estimate the true replacement costs of certain Naval officer programs.

The Delphi technique has been called a "cybernetic arbitration" - "cybernetic" because the process of deliberation is steered, through feedback, and controlled by the questionnaire administrator.²⁹ The Delphi technique attempts to improve the panel or committee approach

²⁹ The originators of this method for using a group of experts called the approach "Delphi" after the Greek oracle, for they first thought of it as a scheme for better forecasting.

in arriving at a forecast or estimate by subjecting the views of individual experts to each other's criticism in ways that avoid face to face confrontation and provide anonymity of opinions and of arguments advanced in defense of these opinions. In this version, direct debate was replaced by the interchange of information and opinion through a carefully designed sequence of questionnaires. The participants were asked not only to give their opinions but the reasons for these opinions, and, at each successive interrogation, they were given new and refined information, in the form of opinion feedback, which was derived by a computed consensus from the earlier parts of the program. The process was continued until further progress toward a consensus would have appeared negligible.

The Delphi technique can best be applied to broad policy problems. For example, will the periodic measurement and reporting of human resource replacement costs cause managers to maintain the highest quality of human assets at the lowest possible cost? But while the concept of human resource replacement costs has never been well defined for most managers, almost all of them have some ideas of personnel costs and personnel management that may be useful. However, they fail in having any well developed notion of the relative effectiveness and actual costs of human resources under their control. Thus there was a need to survey these ideas to create an atmosphere in which they may be brought forth, subjected to critical review, modified and ordered, according to various criteria with respect to their possible effectiveness, acceptability, and costs. The Delphi technique was well suited to this task.

With this perspective, a two part questionnaire relating to issues of human resource management was administered in three rounds of questioning to eighteen professional Naval Officers. Collectively, the officers have managed thousands of personnel during their Naval careers. These officers were interested in human resource management, however, they were not directly involved in studies of human resource accounting. The actual numerical values which arose in Part II of the questionnaires should not be interpreted as reliable or authoritative estimates of actual costs, but only as the panels' best estimate of the true values.³⁰

B. QUESTIONNAIRE DESIGN

In considering the types of questions that should be included in the Delphi survey, it was convenient to distinguish items that were essentially evaluative (that is, items involving agreement or disagreement on questions of a policy nature) and questions seeking a quantitative response. The latter consisted of questions asking for an estimate of the costs of various officer input programs and the cost to the Navy of training officers.

The questionnaire was accordingly divided in two parts: The first evaluative and the second quantitative. Part I consisted of evaluative items in the form of broad policy objectives for which the respondents were asked to furnish a response.³¹ The questions sought to determine agreement or disagreement to the policy statements. Presumably the

³⁰ See Appendix B.

³¹ See Appendix A.

questions which were most promising in the eyes of the evaluators were those with the highest agreement.

In Part II, the respondents were asked to supply numerical answers in the form of low, medium, and high values. The medium value was to be the panels' best estimate of the actual cost and the low and high values were to be the range within which the true value would fall.

In designing the questionnaire items, the author was particularly interested in comparing the effect of feedback under contrasting circumstances. For example, question number 1 was anticipated to generate a fairly large number of agreements on the first round. The advantage of including easy questions like this in a Delphi questionnaire was to obtain added knowledge from the feedback round. The author felt that such a question, while almost certainly not generating any new information, may have been helpful to the respondents in answering other items on the questionnaire, and in addition, helped to identify individuals whose answers systematically deviate from the group norm.

In contrast with the ostensibly straightforward questions, a number of items were included (e. g., question 8) for which it was felt there would be high disagreement. One of the objectives was to compare convergent behavior in such situations with that on less controversial issues.

The panel felt the questions in Part II were much more difficult and there was a high degree of disagreement, especially on the first two rounds.

C. OUTLINE OF THE DELPHI PROCEDURE

All three rounds of the questionnaire were administered to all 18 participants on the same day. There was a break between each iteration to allow the administrator time to tabulate the results of each previous round. The tabulated results were then placed on a chalk-board. This presentation gave the number of responses in each column for each question. For Part I, the author presented verbally, to the panel, the experts' various comments on each question in summary form.

The feedback given to the respondents for Part II was the mean values of the group. Also at this time the panel members were given certain clarifying data in response to questions relating to Part II, such as length of obligated service (Round 3).

D. FEEDBACK

An underlying premise of the Delphi approach is a respondent is better equipped to answer a question if he has some information on how the other individual panel members have responded to the same question. The feedback information may take several forms: (1) verbal (summary comments of the panel presented by the administrator), or (2) numerical (number of responses, or mean values). In this study both forms of feedback were used.

When the number of participants in a Delphi exercise is very large, designing verbal feedback always poses a dilemma. Even when the panel is relatively small there are problems, because if the feedback had included all the comments of all the participants, the volume of the feedback would have rapidly become prohibitive and its function self-defeating. On the other hand, by editing the first and second round the feedback becomes somewhat arbitrary and may be adding a

bias of the administrator in his choice of responses to submit back to the panel. When these opinions and responses were aggregate and condensed, certain participants may have inevitably (maybe justifiably) felt that their opinions were not adequately represented in the edited feedback version.

Since the individuals were asked to furnish judgmental estimates for the numerical items in Part II, a reasonable choice for feedback data was the group's mean response for the low, medium, and high values. Very little verbal feedback was supplied with this data other than to reply to a few written questions from the panel members. In this part the respondents were not asked to explain their answers.

It would be very difficult, if at all possible, to determine the direct impact of the verbal, compared with numerical, feedback on the panel members. In the informal discussion after the experiment, many of the subjects of the study said they had felt more at ease with the questions in Part I, and rather uncomfortable with the request for numerical data in Part II because they did not have any idea of actual costs asked for.

E. DIFFICULTIES

1. Modifications Between Rounds

In the usual Delphi procedure there is usually a lag of at least a week or so between rounds. The advantage in this method is that it allows a modification of the question before returning it to the panel in the next round. This was not done in this survey due to a time restriction, however, some of the questions were changed between rounds. The changes in the questions were minor but often enough to

cause the respondents to change their response from agreement to disagreement or vice versa. One change that should be added in future studies would be to ask the respondents for both a desirability and feasibility rating for the policy questions.

2. Other Sources of Ambiguity

An important lesson to be learned from the experiment is that questions asking for an estimated value may be too ambiguous, especially when dealing with "financial types." The main problem was with questions 10, 11 and 13, due to each member making his own decision as to what indirect costs were involved with the question. This may have accounted for the large range in responses in the first round. It was also discovered after the rounds were completed, and during the informal discussion when cost data from the Bureau of Naval Personnel was shown to the panel, they for the most part rejected the data as unrealistic. Perhaps this was the result of the panel's recent training in financial management, where they have learned to question all cost data unless the basis for the allocations can be shown.

The difficulty with question 15 revolved around informal training. At first, several members felt that all Navy costs in peacetime should be considered training costs in the broadest sense. Most of the panel agreed that informal training is usually not in the budget, but should be part of the training costs.

F. SUMMARY AND DISCUSSION OF THE DIRECT FINDINGS

An important objective of the Delphi experiment is the degree to which feedback affects convergence of opinion. In observing behavior on a single question alone, one might be able to make an intuitive

judgment of whether or not the group exhibited "significant" convergence by observing trends in responses between rounds. Appendix B gives the complete response to each question and the various comments from the panel members.

1. Question 1

1 - 1 Navy managers should be more concerned about human resource management.

2 - 1 More responsibility has been placed on the Navy manager for managing his human resources in the last few years.

3 - 1 As a Navy manager you should give more attention to your human resources.

| | <u>Round 1</u> | | <u>Round 2</u> | | <u>Round 3</u> | |
|-----------------|----------------|--------------|----------------|--------------|----------------|--------------|
| | No. | % | No. | % | No. | % |
| FULLY AGREE | 14 | 77.8 | 10 | 55.6 | 13 | 72.2 |
| PARTIALLY AGREE | 3 | 16.7 | 8 | 44.4 | 1 | 5.5 |
| DISAGREE | 0 | | 0 | | 4 | 22.3 |
| UNDECIDED | 1 | 5.5 | 0 | | 0 | |
| | <u>18</u> | <u>100.0</u> | <u>18</u> | <u>100.0</u> | <u>18</u> | <u>100.0</u> |

The question in Round 1, while stating a general policy, was expected to generate a large degree of agreement. In Round 2 there was less full agreement but at least 100% of the panel did agree that in the last few years more responsibility has been placed on the Navy manager for managing his human resources. A major reason for this agreement may be the fact that in the last few years under the Chief of Naval Operations, Admiral Zumwalt, there has been much more emphasis on the human resources in the Navy. This has been reinforced further by the recent Human Goals Program of the Navy. The main reasons

given for the disagreement in Round 3 were that people are just one part of the system and with undue emphasis the other parts of the system may be overlooked. For example, if the Navy spends too large a share of the total budget on personnel, shipbuilding could suffer. There must be a proportionate amount of time and money spent on both parts of the system, men and equipment.

2. Question 2

Your command's budget should be charged for the early replacement of personnel, (not death) attributed to command actions.

| | <u>Round 1</u> | | <u>Round 2</u> | | <u>Round 3</u> | |
|-----------------|----------------|--------------|----------------|--------------|----------------|--------------|
| | No. | % | No. | % | No. | % |
| FULLY AGREE | 4 | 22.3 | 2 | 11.1 | 3 | 16.7 |
| PARTIALLY AGREE | 3 | 16.7 | 4 | 27.8 | 3 | 16.7 |
| DISAGREE | 7 | 38.8 | 10 | 55.5 | 12 | 66.6 |
| UNDECIDED | 2 | 11.1 | 2 | 11.1 | 0 | |
| | <u>18</u> | <u>100.0</u> | <u>18</u> | <u>100.0</u> | <u>18</u> | <u>100.0</u> |

This question created the most response and generated much discussion. For most of the panel, this policy would have placed too great a burden on the command. This question was in direct conflict with question one. While managers feel they should have more responsibility for managing their human resources, they do not appear to be willing to accept the responsibility for the costs. This question also calls attention to the managers distrust of the present method of personnel costing, and reinforces the need for a standard cost model, hopefully one such as developed in Chapter Threc. This question specifically points out costs due to personnel actions by the command, and yet it was felt by the panel that a command does not have enough control of

replacement costs. The feedback in Rounds 2 and 3 from questions 11, 12 and 13 may have had a great influence on the response to this question that led to convergence towards disagreement in Rounds 2 and 3. Once the panel was shown the replacement costs for the various officer programs, they may have felt this large a cost should not be added to the costs of the command. The results from this question strongly indicate the influence that the reporting of replacement costs may have on the manager's decision, and tends to support the hypothesis. A policy such as this would have many problems, but it may also force the command to placing more attention on leadership, training, and retraining of low performers who have the potential but lack motivation.

3. Question 3

1 - 3 A manager's performance should be evaluated on how effective he is in managing human resources.

2/3-3 A manager's performance should also be evaluated on how effective he is in managing human resources.

| | <u>Round 1</u> | | <u>Round 2</u> | | <u>Round 3</u> | |
|-----------------|----------------|--------------|----------------|--------------|----------------|--------------|
| | No. | % | No. | % | No. | % |
| FULLY AGREE | 8 | 44.5 | 13 | 72.2 | 15 | 83.4 |
| PARTIALLY AGREE | 9 | 50 | 5 | 27.8 | 2 | 11.1 |
| DISAGREE | 1 | 5.5 | 0 | | 1 | 5.5 |
| UNDECIDED | 0 | | 0 | | 0 | |
| | <u>18</u> | <u>100.0</u> | <u>18</u> | <u>100.0</u> | <u>18</u> | <u>100.0</u> |

This question received a high degree of agreement in all three rounds. However, in Round 1 there were more who partially agree. With the addition of the "also" in Rounds 2 and 3 there were almost total agreement. Most of the panel felt that Naval officers are already

evaluated on human resource management of some degree on the Navy officers fitness reports. One major shortcoming mentioned by only one of the panel members was that in evaluating the manager on personnel management, dollar measures and effectiveness are not really evaluated under the present system.

4. Question 4

1 - 4 The Navy makes investments in personnel the same as equipment.

2/3-4 Investments in people should receive the same attention as investments for equipment.

| | <u>Round 1</u> | | <u>Round 2</u> | | <u>Round 3</u> | |
|-----------------|----------------|--------------|----------------|--------------|----------------|--------------|
| | No. | % | No. | % | No. | % |
| FULLY AGREE | 17 | 94.5 | 12 | 66.7 | 9 | 50 |
| PARTIALLY AGREE | 0 | | 5 | 27.8 | 6 | 33.4 |
| DISAGREE | 1 | 5.5 | 1 | 5.5 | 2 | 11.1 |
| UNDECIDED | 0 | | 0 | | 1 | 5.5 |
| | <u>18</u> | <u>100.0</u> | <u>18</u> | <u>100.0</u> | <u>18</u> | <u>100.0</u> |

Round 2 pointed out the weakness in the question; if the question had been; the Navy makes investments in personnel the same way as for equipment, there would have been less agreement. This was modified in Rounds 2 and 3, and expectedly received less full agreement. Again the responses point out the weakness of the present system, and cry out for a change in the way we make our present personnel investment decisions.

5. Question 5

It is possible to determine the investments the Navy has made in each individual.

| | Round 1 | | Round 2 | | Round 3 | |
|-----------------|-----------|--------------|-----------|--------------|-----------|--------------|
| | No. | % | No. | % | No. | % |
| FULLY AGREE | 1 | 5.5 | 3 | 16.7 | 2 | 11.1 |
| PARTIALLY AGREE | 10 | 55.6 | 8 | 44.4 | 6 | 33.4 |
| DISAGREE | 7 | 38.9 | 7 | 38.9 | 10 | 55.5 |
| UNDECIDED | 0 | | 0 | | 0 | |
| | <u>18</u> | <u>100.0</u> | <u>18</u> | <u>100.0</u> | <u>18</u> | <u>100.0</u> |

This question really gets at the heart of human resource accounting. From this question most of the panel felt that it would be impossible under the present accounting system to determine the investments the Navy makes in each individual. This may imply a lack of confidence in the present methods of accounting for personnel costs in the Navy. The second and third round of the question produced more disagreement based on the problems the panel had in determining the cost data requested in Part II: This question begs an answer to the problem: How can we expect the Navy manager to be more concerned over maintaining the highest quality of human assets at the lowest possible cost if he has no idea of his personnel costs? If the manager only considers personnel expenses and ignores investment costs, he has only looked at part the total costs. The feedback from the rounds only reinforced the managers' lack of confidence in personnel costs as they see them.

6. Question 6

1 - 6 There are no incentives for good human resource management in the Navy.

2 - 6 There are few incentives for good human resource management in the Navy.

3 - 6 Incentives are lacking for good human resource management in the Navy.

| | <u>Round 1</u> | | <u>Round 2</u> | | <u>Round 3</u> | |
|-----------------|----------------|--------------|----------------|--------------|----------------|--------------|
| | No. | % | No. | % | No. | % |
| FULLY AGREE | 2 | 11.1 | 5 | 27.8 | 2 | 11.1 |
| PARTIALLY AGREE | 2 | 11.1 | 6 | 33.4 | 9 | 50 |
| DISAGREE | 13 | 72.3 | 7 | 38.8 | 7 | 38.9 |
| UNDECIDED | 1 | 5.5 | 0 | | 0 | |
| | <u>18</u> | <u>100.0</u> | <u>18</u> | <u>100.0</u> | <u>18</u> | <u>100.0</u> |

This question failed to reach the full consensus that was expected, but it did show a weakening in the number of disagreements. This question also suggests a major weakness in the hypothesis, and that is, regardless of reporting and measuring human resource replacement costs or the model used there must be stronger incentives added to force the manager to show more concern for better management of the human resource. Along with adding incentives to improve personnel management, perhaps there should be penalties added for those who continue to show poor management of their human resources.

7. Question 7

1 - 7 As a manager you have no control over personnel investments made in the Navy.

2 - 7 As a manager you have little control of personnel investments made by the Navy.

3 - 7 As a manager you have much control over personnel investments made by the Navy.

| | <u>Round 1</u> | | <u>Round 2</u> | | <u>Round 3</u> | |
|-----------------|----------------|--------------|----------------|--------------|----------------|--------------|
| | No. | % | No. | % | No. | % |
| FULLY AGREE | 3 | 16.7 | 2 | 11.1 | 2 | 11.1 |
| PARTIALLY AGREE | 5 | 27.8 | 6 | 33.4 | 2 | 11.1 |
| DISAGREE | 10 | 55.5 | 10 | 55.5 | 14 | 77.8 |
| UNDECIDED | 0 | | 0 | | 0 | |
| | <u>18</u> | <u>100.0</u> | <u>18</u> | <u>100.0</u> | <u>18</u> | <u>100.0</u> |

Given the additional cost data for the various officer procurement programs in Part II, the panel felt that they did not have any control over the initial personnel costs. Also they felt that middle level managers have little control over personnel investments. They failed to see how their leadership and management could effect personnel investments. For example, given the choice of giving a man a three month early release from the service or keeping him, would their decision be different if they knew the replacement cost, or the indirect cost of these lost services? All too often this kind of decision is based on trying to help the man and not what the cost will be to the Navy. Another example of the kind of control a middle manager may have on investment costs would be the recommendations for service school. Will the man give added value with the additional training, or would on-the-job training suffice? And when you lose the services of the man, how long will it take to receive a replacement? What are the costs to the command and the Navy based on the decision to be made? At the present time, this type of question is never asked, and if it were, the costs data would be impossible to determine under the present personnel cost system.

8. Question 8

Command policies may have an adverse influence on replacement costs for the Navy's human resources.

| | <u>Round 1</u> | | <u>Round 2</u> | | <u>Round 3</u> | |
|-----------------|----------------|--------------|----------------|--------------|----------------|--------------|
| | No. | % | No. | % | No. | % |
| FULLY AGREE | 11 | 61.1 | 16 | 88.9 | 17 | 94.5 |
| PARTIALLY AGREE | 3 | 16.7 | 2 | 11.1 | 1 | 5.5 |
| DISAGREE | 0 | | 0 | | 0 | |
| UNDECIDED | 4 | 22.3 | 0 | | 0 | |
| | <u>18</u> | <u>100.0</u> | <u>18</u> | <u>100.0</u> | <u>18</u> | <u>100.0</u> |

In this general policy question there was almost complete consensus; unfortunately this may have been due to the use of the verb "may" in the question, rather than "do." While this question does not relate directly to the hypothesis, it does indicate that the panel did feel command policies do have an influence on human resources replacement costs.

9. Question 9

1 - 9 Having personnel replacement costs available to you would assist you in being a more effective manager.

2 - 9 You would be a more effective human resource manager if personnel replacement costs were made available to you.

3 - 9 As a Naval manager personnel replacement costs would assist you in being a more effective manager.

| | <u>Round 1</u> | | <u>Round 2</u> | | <u>Round 3</u> | |
|-----------------|----------------|--------------|----------------|--------------|----------------|--------------|
| | No. | % | No. | % | No. | % |
| FULLY AGREE | 8 | 44.4 | 6 | 33.4 | 7 | 38.9 |
| PARTIALLY AGREE | 4 | 22.3 | 8 | 44.4 | 8 | 44.4 |
| DISAGREE | 5 | 27.8 | 3 | 16.7 | 3 | 16.7 |
| UNDECIDED | 1 | 5.5 | 1 | 5.5 | 0 | |
| | <u>18</u> | <u>100.0</u> | <u>18</u> | <u>100.0</u> | <u>18</u> | <u>100.0</u> |

There are several statements that can be made about this question. First, there was little real convergence between rounds for this question, but in the final round after having contact with replacement cost data in Part II, the members felt that such data would assist them in being a more effective manager. Second, in order for replacement cost data to be of benefit to the average manager, he must be educated in its meaning and how it could assist him in making personnel decisions.

10. Question 10

The Navy spends a lot of money on candidates for commissioning in the Navy. What do you estimate are the Pre-commissioning cost for each of the following programs?

For all three programs (Naval Academy, NROTC and OCS) there was a high degree of convergence. For all three programs Round 2 had the highest values, and by Round 3, the mean had dropped to a value close to the reported actual costs, except for the NROTC program which was still quite high. In all but one case, the low estimate for OCS, the standard deviation was within an acceptable limit and had decreased. For all three programs, the panel's estimated costs were higher than reported actual. The important point in this data is that given some

cost data from the feedback between rounds the managers are able to improve their estimate of the cost.

11. Question 11

At the end of 4 years of Naval service, how much do you estimate that the Navy has spent to train a surface officer from each of the programs?

The importance of the question is shown by the lack of agreement found in the estimates of the panel members as to the estimated costs of these various programs. The panel seems to have much difficulty arriving at the costs. A standard method of arriving at the cost is not available to them. For the most part much of the panel had never even considered such replacement costs. Again this points out a need for developing a standard way of determining human resource investment costs for the Navy.

12. Question 12

What do you estimate it costs to enlist one Navy recruit? During the initial round it was obvious that the panel did not have any real idea of recruiting costs. While the final round approached the reported costs, the standard deviation was so large as to make the mean value almost meaningless.

13. Question 13

To replace one surface line officer at the end of his obligated service costs _____? For the Naval Academy, NROTC and OCS programs.

The same comments made for Question 11 are applicable to this question. One problem built into this question was that it called for the panel to make an assumption over the length of obligated service

for each program. Surprisingly, this question was not brought up by the panel members. Given the data from the previous rounds, the panel was able to make a fairly close estimate of the reported cost by Round 3. One point that should be made is that during all of the feedback periods, at no time was the panel told if the mean value was too high or low, but in almost every case the next round showed a marked lowering in the estimated value of the group.

14. Question 14

What percentage of the Navy's FY - 75 budget will be spent on personnel?

The response to this question showed a very high amount of convergence with fairly low standard deviations. The fact that the mean value finally approached so close to the reported values may be attributed to the awareness of the panel to this data since it had recently been published in the news media concerning the FY - 75 Defense budget.

15. Question 15

What percentage of the Navy's FY - 75 budget will be spent on training?

The panel had some difficulty with this question in trying to determine what costs were involved in training as they are currently budgeted. One of the biggest problems was in allocating of indirect costs for training. Also are there any costs for on-the-job training included in the Navy's training budget? This problem again points out the need for the Navy to develop a standard method of accounting for personnel investments. It should be pointed out that the panel did approach with relative ease the figure reported as the amount budgeted for training.

G. IMPLICATIONS FOR FUTURE RESEARCH

One of the most challenging aspects for future applications of the Delphi technique to the field of Human Resource Accounting will almost certainly be in the design of a cohesive set of questionnaire items that are both well-posed and useful to the decisionmaker. It became apparent during the study that developing concise questions which will be given similar interpretations by all respondents will inevitably involve substantial pre-testing. The usual difficulties in questionnaire design are compounded in the concept of human resource accounting by disagreement over underlying assumptions, by the absence of an agreed upon vocabulary, and lack of standard personnel costing procedures.

V. CONCLUSION

This thesis has attempted to contribute to an evolving theory of human resource accounting replacement cost by testing the validity of aspects of a replacement cost model on the Navy manager. To achieve this aim, a Delphi technique was designed to test the validity of the hypothesized impact (when human resource replacement costs are measured and reported periodically, managers will tend to become more concerned over maintaining the highest quality of human assets at the lowest possible cost) of reporting and measuring human replacement cost on management decisions and to discover any variable not presently contained in the model of the relationship to the problem. This study was based upon a replacement cost model developed by Eric G. Flamholtz. The results of the study support the validity of the hypothesis, but also indicate other possible determinants that might be included in the model.

The study also may have provided evidence for one of the premises on which this research is based -- the need for a paradigm of human resource management. Although there is ample research evidence of the relation between motivation and productivity, and satisfaction and the probability of turnover, this study did not cite either motivation or satisfaction directly as determinants of replacement cost. In addition, even though organization rewards in the Navy would appear to be minimal, Navy managers are greatly concerned over managing their human resources. It also was clear that Navy managers presently do not have a paradigm, or well-articulated framework, to guide their thinking about the process of managing or valuing human resources.

At the present, Navy managers probably do not have a framework which contains all the determinants of an individual's replacement cost. They probably perceive their people in terms of an expense model, and even then only under a set of loosely connected categories or variables rather than in terms of a system per se.

A partial explanation for the lack of such a human resource paradigm may be explained in the fact that the individual manager's definition of a situation differs from the reality of the situation in that the latter is generally too complex to be handled in all of its details. Thus present behavior involves substituting for the complex reality of a replacement cost model an expense model that is sufficiently simple to be handled by the manager in making his human resource management decisions. For a given decision-making situation, the definition of that situation is simplified by omitting some criteria and paying particular attention to others. The process of simplification is essentially the same for individuals as for the organization. In this

context, one can understand the tendency of Navy managers to perceive selectively some determinants of an individual replacement cost but not others.

In summary, the proposed model of human resource replacement cost can provide managers with a well articulated framework to guide the management of people in the Navy. Potentially it can provide management with a way to facilitate thinking about human resource management. In a sense, the notion of human resource replacement cost can serve as the justification of human resource management; it can simultaneously provide the goal and the criterion for the management of human resources in the Navy. More specifically, the aim of human resource management can be viewed as the need to contribute to the value of the organization as a whole by optimizing the value of its human assets and at the same time reducing the overall costs of maintaining its human assets.

If the Navy manager will view the aim of human resource management as the optimization of human resource value, then given the proper tools he will become more concerned over maintaining the highest quality of human assets at the lowest possible cost.

Another significant aspect of this preliminary model of an individual's replacement cost is that it provides a theoretical foundation for measuring the value of the Navy's human resources. Specifically, the model's constructs indicate the kinds of variables which need to be considered in developing a valid and reliable measure of an individual's replacement cost. In addition, the model helps the manager to understand more fully the nature of the problem of measuring the investments made in the individual and is a surrogate of his value to the organization.

The model also suggests the importance of distinguishing between an individual's conditional and realizable value to the Navy, a distinction sometimes overlooked in practice.

Both the proposed model and the Delph technique designed as a partial test of its validity are intended as the first steps toward development of a theory of human resource value in the Navy. Although it should not be inferred that the model purports to explain the nature of human resource value of replacement costs fully or that the variables are validated completely, the evidence obtained in this study supports the validity of the model's hypothesized determinants. In the future, research will be required to test these findings further and to test the validity of the model's hypothesized relations.

Appendix A

QUESTIONNAIRE INSTRUCTION

GENERAL INSTRUCTIONS FOR ROUND 1 QUESTIONNAIRE

In the last few years the Navy has become more concerned about human resource management. As an outgrowth of this concern, this study is attempting to use the DELPHI survey method to determine the value of human resource management to you, the Navy manager. The attached questionnaire is one test vehicle designed to determine this concern.

You have been selected as members of a panel of experts to evaluate this instrument because of your experience and training in dealing with the Navy's human resources. In the DELPHI methodology, two points are paramount; first, iteration of results, and second, anonymity. You will receive a second questionnaire, and even a third, in which the results of the previous questionnaire will be given to you in summary form.

None of the panel members will be cited by name, so you will be required to review the results based on the overall group view, not the relative rank or authority of the individual respondents. Therefore, please preserve the necessary anonymity by not discussing this experiment among yourselves until the experiment is completed.

After you start the questionnaire you may only address questions to the administrator on the paper provided to you. You will receive a response to your questions before the next iteration.

On the space provided on your questionnaire please indicate to the extent you can (1) the general reasoning behind your answers, (2) any

comments you may have on the concept, and/or the test questionnaire, and (3) any request for additional information which if available, you think would help you make a more valid judgment about these questions.

Your primary task will be to answer questions of a general information type and to express your opinion on various questions concerning the human resource. The experiment is not a quiz or an examination, nor is it a test of social influence. It is not expected that you will know the exact answer to all of the questions. However, for the most part you will have some general knowledge of the subject to enable you to make and estimate - an informed guess - of the answer. You are to make as good an estimate as you can; but in any case, please answer every question.

DELPHI QUESTIONNAIRE
Human Resource Management
(Round 1)

| | CHECK APPROPRIATE COLUMN | | | | If you do not fully agree, state your reasoning |
|---|--------------------------|-----------------|-----------|-----------|---|
| | FULLY AGREE | PARTIALLY AGREE | DIS-AGREE | UNDECIDED | |
| 1. Navy managers should be more concerned about human resource management. | | | | | |
| 2. Your command's budget should be charged for the early replacement of personnel, (not death) attributed to command actions. | | | | | |
| 3. A manager's performance should be evaluated on how effective he is in managing human resources. | | | | | |
| 4. The Navy makes investments in personnel the same as equipment. | | | | | |
| 5. It is possible to determine the investments the Navy has made in each individual. | | | | | |
| 6. There are no incentives for good human resource management in the Navy. | | | | | |
| 7. As a manager you have no control over personnel investments made in the Navy. | | | | | |
| 8. Command policies may have an adverse influence on replacement costs for the Navy's human resources. | | | | | |
| 9. Having personnel replacement costs available to you would assist you in being a more effective manager. | | | | | |

Part II of Questionnaire (Round 1)

PLEASE PLACE THE DOLLAR AMOUNTS OR PERCENTAGE YOU ESTIMATE FOR EACH QUESTION IN THE APPROPRIATE SPACE. THE MID ESTIMATE SHOULD BE YOUR ESTIMATE FOR THE TRUE VALUE. THE HIGH AND LOW VALUE SHOULD BE THE RANGE YOU THINK MAY HOLD THE CORRECT VALUE. PLEASE TRY TO BE REALISTIC IN YOUR VALUES.

10. What do you estimate are the Navy's pre-commissioning costs (what the Navy spends on an individual for training, travel, procurement and pay prior to commissioning) for each of the three programs listed below ?

| | LOW | MEDIUM | HIGH |
|-------------------|-----|--------|------|
| NAVAL ACADEMY | | | |
| NROTC SCHOLARSHIP | | | |
| OCS | | | |

11. At the end of 4 years of naval service, how much do you estimate that the Navy has spent to train a surface officer from each of the programs listed below ?

| | LOW | MEDIUM | HIGH |
|-------------------|-----|--------|------|
| NAVAL ACADEMY | | | |
| NROTC SCHOLARSHIP | | | |
| OCS | | | |

12. What do you estimate it costs the Navy to recruit one enlisted person ?

| | LOW | MEDIUM | HIGH |
|-----------------|-----|--------|------|
| PER CAPITA COST | | | |

13. What do you estimate it costs to replace one surface line officer at the end of his obligated service ?

| | LOW | MEDIUM | HIGH |
|-------------------|-----|--------|------|
| NAVAL ACADEMY | | | |
| NROTC SCHOLARSHIP | | | |
| OCS | | | |

14. What percentage of the Navy's Total Obligation Authority is spent on personnel (including retirement costs) ?

| | | | | | |
|-----|---|--------|---|------|---|
| LOW | % | MEDIUM | % | HIGH | % |
|-----|---|--------|---|------|---|

15. What percentage of the Navy's total budget is invested in personnel training ?

| | | | | | |
|-----|---|--------|---|------|---|
| LOW | % | MEDIUM | % | HIGH | % |
|-----|---|--------|---|------|---|

PLEASE PLACE ANY QUESTIONS AND COMMENTS YOU HAVE FOR THE TEST ADMINISTRATOR ON THE ATTACHED SHEET OF PAPER.

GENERAL INSTRUCTIONS FOR ROUND 2 QUESTIONNAIRE

This is the second questionnaire on human resource management. Most of the questions in this group will be identical to those which you answered previously.* This time, however, you will be told something about how the other respondents answered each question, also you will be given the additional information you may have requisitioned in Round 1. What we are asking you to do is provide revised answers to each question, having in hand this information on the responses of the other participants.

On each item you will be given statistical information reflecting response trends on the first round of questioning. In addition to this numerical information, you will be given for certain items a list of "reasons" which were important to other individuals in answering the question.

Once again we ask that you do not discuss this questionnaire with anyone until the end of the experiment.

* Several of the questions have been slightly reworded.

DELPHI QUESTIONNAIRE
Human Resource Management
(Round 2)

| | CHECK APPROPRIATE COLUMN | | | | If you do not fully agree, state your reasoning |
|---|--------------------------|-----------------|-----------|-----------|---|
| | FULLY AGREE | PARTIALLY AGREE | DIS-AGREE | UNDECIDED | |
| 1. More responsibility has been placed on the Navy manager for managing his human resources in the last few years. | | | | | |
| 2. Your command's budget should be charged for the early replacement of personnel, (not death) attributed to command actions. | | | | | |
| 3. A manager's performance should also be evaluated on how effective he is in managing his human resources. | | | | | |
| 4. Investments in people should receive the same attention as investments for equipment. | | | | | |
| 5. It is possible to determine the investments the Navy has made in each individual. | | | | | |
| 6. There are few incentives for good human resource management in the Navy. | | | | | |
| 7. As a manager you have little control of personnel investments made by the Navy. | | | | | |

| | | | | | | |
|---|--|--|--|--|--|--|
| 8. Adverse command policies may cause an increase in human resource replacement cost. | | | | | | |
| 9. You would be a more effective human resource manager if personnel replacement costs were made available to you | | | | | | |

Part II of Questionnaire (Round 2)

PLEASE PLACE THE DOLLAR AMOUNTS OR PERCENTAGE YOU ESTIMATE FOR EACH QUESTION IN THE APPROPRIATE SPACE. THE MID ESTIMATE SHOULD BE YOUR ESTIMATE FOR THE TRUE VALUE. THE HIGH AND LOW VALUE SHOULD BE THE RANGE YOU THINK MAY HOLD THE CORRECT VALUE. PLEASE BE REALISTIC IN YOUR VALUES.

10. The Navy spends a lot of money on candidates for commissioning in the Navy. What do you estimate are the pre-commissioning costs for each of the below listed programs?

| | LOW | MEDIUM | HIGH |
|-------------------|-----|--------|------|
| NAVAL ACADEMY | | | |
| NROTC SCHOLARSHIP | | | |
| OCS | | | |

11. At the end of 4 years of naval service, how much do you estimate that the Navy has spent to train a surface officer from each of the programs listed below?

| | LOW | MEDIUM | HIGH |
|-------------------|-----|--------|------|
| NAVAL ACADEMY | | | |
| NROTC SCHOLARSHIP | | | |
| OCS | | | |

12. What do you estimate it costs to enlist one Navy recruit?

| | LOW | MEDIUM | HIGH |
|-----------------|-----|--------|------|
| PER CAPITA COST | | | |

13. To replace one surface line officer at the end of his obligated service costs ? For each program listed below:

| | LOW | MEDIUM | HIGH |
|-------------------|-----|--------|------|
| NAVAL ACADEMY | | | |
| NROTC SCHOLARSHIP | | | |
| OCS | | | |

14. What percentage of the Navy's FY-75 budget will be spent on personnel (including retirement costs)?

LOW _____% MEDIUM _____% HIGH _____%

15. What percentage of the Navy's FY-75 budget will be spent on training?

LOW _____% MEDIUM _____% HIGH _____%

GENERAL INSTRUCTIONS FOR ROUND 3 QUESTIONNAIRE

Your task for this final questionnaire on human resource management will be to reconsider your previous answers and to revise them where you feel appropriate. The posted numbers summarize the answers of all other participants in Round 2. This summary is given in terms of the median response for each question.

Re-think the question, considering whether there were factors you might have overlooked. However, keep in mind that you are still being asked only for your best estimate, based on what you know.

DELPHI QUESTIONNAIRE
Human Resource Management
(Round 3)

CHECK APPROPRIATE COLUMN

| | FULLY AGREE | PARTI- ALLY AGREE | DIS- AGREE | UNDE- CIDED | If you do not fully agree, state your reasoning |
|---|----------------|-------------------------|---------------|----------------|---|
| 1. As a Navy manager you should give more attention to your human resources. | | | | | |
| 2. Your command's budget should be charged for the early replacement of personnel, (not death) attributed to command actions. | | | | | |
| 3. A manager's performance should also be evaluated on how effective he is in managing his human resources. | | | | | |
| 4. Investments in people should receive the same attention as investments for equipment. | | | | | |
| 5. It is possible to determine the investments the Navy has made in each individual. | | | | | |
| 6. Incentives for good human resource management are lacking in the Navy. | | | | | |
| 7. As a manager you have much control over personnel investments made by the Navy. | | | | | |
| 8. Adverse command policies may cause an increase in human resource replacement costs. | | | | | |
| 9. As a Naval manager personnel replacement costs would assist you in being a more effective manager. | | | | | |

Part II of Questionnaire (Round 3)

PLEASE PLACE THE DOLLAR AMOUNTS OR PERCENTAGE YOU ESTIMATE FOR EACH QUESTION IN THE APPROPRIATE SPACE. THE MID ESTIMATE SHOULD BE YOUR ESTIMATE FOR THE TRUE VALUE. THE HIGH AND LOW VALUES SHOULD BE THE RANGE YOU THINK MAY HOLD THE CORRECT VALUE.

10. The Navy spends a lot of money on candidates for commissioning in the Navy. What do you estimate are the pre-commissioning costs for each of the below listed programs?

| | LOW | MEDIUM | HIGH |
|-------------------|-----|--------|------|
| NAVAL ACADEMY | | | |
| NROTC SCHOLARSHIP | | | |
| OCS | | | |

11. At the end of 4 years of naval service, how much do you estimate that the Navy has spent to train a surface line officer from each of the below listed programs?

| | LOW | MEDIUM | HIGH |
|-------------------|-----|--------|------|
| NAVAL ACADEMY | | | |
| NROTC SCHOLARSHIP | | | |
| OCS | | | |

12. What do you estimate it costs to enlist one Navy recruit?

| | LOW | MEDIUM | HIGH |
|-----------------|-----|--------|------|
| PER CAPITA COST | | | |

13. To replace one surface line officer at the end of his obligated services costs ? For each program listed below:

| | LOW | MEDIUM | HIGH |
|-------------------|-----|--------|------|
| NAVAL ACADEMY | | | |
| NROTC SCHOLARSHIP | | | |
| OCS | | | |

14. What percentage of the Navy's FY-75 budget will be spent on personnel (including retirement costs)?

LOW _____% MEDIUM _____% HIGH _____%

15. What percentage of the Navy's FY-75 budget will be spent on training?

LOW _____% MEDIUM _____% HIGH _____%

Appendix B

QUESTION 1

1 - 1 Navy managers should be more concerned about human resource management.

2 - 1 More responsibility has been placed on the Navy manager for managing his human resources in the last few years.

3 - 1 As a Navy manager you should give more attention to your human resources.

| | <u>ROUND 1</u> | | <u>ROUND 2</u> | | <u>ROUND 3</u> | |
|-----------------|----------------|---------------|----------------|---------------|----------------|---------------|
| | <u>No.</u> | <u>%</u> | <u>No.</u> | <u>%</u> | <u>No.</u> | <u>%</u> |
| FULLY AGREE | 14 | 77.8 | 10 | 55.6 | 13 | 72.2 |
| PARTIALLY AGREE | 3 | 16.7 | 8 | 44.4 | 1 | 5.5 |
| DISAGREE | 0 | 0.0 | 0 | 0.0 | 4 | 22.3 |
| UNDECIDED | <u>1</u> | <u>5.5</u> | <u>0</u> | <u>0.0</u> | <u>0</u> | <u>0.0</u> |
| | <u>18</u> | <u>100.0%</u> | <u>18</u> | <u>100.0%</u> | <u>18</u> | <u>100.0%</u> |

COMMENTS

- Don't know what human resource management is, think it is only a buzz word.

- Concern in this area is already high.

- Depends a lot on the managers, some overdo, but most should spend more time on thinking about it.

- People are but one part of the system, machinery the other.

- Much needs to be done and requires follow on support from CNO, SecNav and DOD.

- Very little progress has been made in this area.

- We have done some but there is still a long way to go.

- I don't think direct effort has been made to place more responsibility.

- With too much attention, wouldn't the people think you are just looking over their shoulder?

- Too much attention is paid to Human resource management now, too permissive as a result.

QUESTION 2

Your command's budget should be charged for the early replacement of personnel, (not death) attributed to command actions.

| | <u>ROUND 1</u> | | <u>ROUND 2</u> | | <u>ROUND 3</u> | |
|-----------------|----------------|---------------|----------------|---------------|----------------|---------------|
| | <u>No.</u> | <u>%</u> | <u>No.</u> | <u>%</u> | <u>No.</u> | <u>%</u> |
| FULLY AGREE | 4 | 22.3 | 2 | 11.1 | 3 | 16.7 |
| PARTIALLY AGREE | 5 | 27.8 | 4 | 22.3 | 3 | 16.7 |
| DISAGREE | 7 | 38.8 | 10 | 55.5 | 12 | 66.6 |
| UNDECIDED | 2 | 11.1 | 2 | 11.1 | 0 | 0.0 |
| | <u>18</u> | <u>100.0%</u> | <u>18</u> | <u>100.0%</u> | <u>18</u> | <u>100.0%</u> |

COMMENTS

- Too hard to determine the amount to charge.
- Too arbitrary.
- Not unless individual command has control over accessions.
- Don't understand the question.
- Some method should be established but I'm not sure this particular alternative is viable.
- Many problems establishing appropriate charges.
- There are some elements of replacement cost not under control of the command.
- Occasionally you get an individual with second thoughts on staying in the Navy and he does his best to get out by disrupting the entire unit.
- Do not think the command should be held responsible for a person who leaves the command for BCD or just because he is a bad apple.
- Too big a club for individual to hold over a command.
- Early replacement caused by a sailor leaving the service would be too difficult to trace directly to command actions.
- Command initiated actions to get rid of drug users, homosexuals, etc. for the good of the service.
- Not unless the command was given control over accepting each person.
- That's a dumb approach! With some knothheads it may be a sound approach, but not with most.

QUESTION 3

1 - 3 A manager's performance should be evaluated on how effective he is in managing human resources.

2/3 - 3 A manager's performance should also be evaluated on how effective he is in managing human resources.

| | <u>ROUND 1</u> | | <u>ROUND 2</u> | | <u>ROUND 3</u> | |
|-----------------|----------------|---------------|----------------|---------------|----------------|---------------|
| | <u>No.</u> | <u>%</u> | <u>No.</u> | <u>%</u> | <u>No.</u> | <u>%</u> |
| FULLY AGREE | 8 | 44.5 | 13 | 72.2 | 15 | 83.4 |
| PARTIALLY AGREE | 9 | 50 | 5 | 27.8 | 2 | 11.1 |
| DISAGREE | 1 | 5.5 | 0 | 0.0 | 1 | 5.5 |
| UNDECIDED | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | <u>18</u> | <u>100.0%</u> | <u>18</u> | <u>100.0%</u> | <u>18</u> | <u>100.0%</u> |

COMMENTS

- This is only one aspect of manager's job.
- How about the mission, personnel are only one part, not the total.
- Other considerations such as use of dollar measures and effectiveness should also be measured.
- Human resources aren't the only resources that need managing.
- But for fleet units, many dysfunctional actions occur over which the manager has no control.
- This is done now.
- Has other things to do.
- This is done now if you believe fitness reports.

QUESTION 4

1 - 4 The Navy makes investments in personnel the same as equipment.

2/3-4 Investments in people should receive the same attention as investments for equipment.

| | <u>ROUND 1</u> | | <u>ROUND 2</u> | | <u>ROUND 3</u> | |
|-----------------|----------------|---------------|----------------|---------------|----------------|---------------|
| | <u>No.</u> | <u>%</u> | <u>No.</u> | <u>%</u> | <u>No.</u> | <u>%</u> |
| FULLY AGREE | 17 | 94.5 | 12 | 66.7 | 9 | 50 |
| PARTIALLY AGREE | 0 | 0.0 | 5 | 27.8 | 6 | 33.4 |
| DISAGREE | 1 | 5.5 | 1 | 5.5 | 2 | 11.1 |
| UNDECIDED | 0 | 0.0 | 0 | 0.0 | 1 | 5.5 |
| | <u>18</u> | <u>100.0%</u> | <u>18</u> | <u>100.0%</u> | <u>18</u> | <u>100.0%</u> |

COMMENTS

- Although they should, the Navy does not explore the needs and requirements for personnel nor plan thoroughly to meet these requirements.

- How do you discount people ?

- You should spend more attention in investments in people.

- Where possible without adding a heavy burden on the capital budgeting system.

- Hard to say if these items are a 50-50 proposition.

- But, you can always hire specialized people - otherwise why have we done a lot of civilization of Navy jobs.

- How do you determine the discount rate on the human resource ?

QUESTION 5

It is possible to determine the investments the Navy has made in each individual.

| | <u>ROUND 1</u> | | <u>ROUND 2</u> | | <u>ROUND 3</u> | |
|-----------------|----------------|---------------|----------------|---------------|----------------|---------------|
| | <u>No.</u> | <u>%</u> | <u>No.</u> | <u>%</u> | <u>No.</u> | <u>%</u> |
| FULLY AGREE | 1 | 5.5 | 3 | 16.7 | 2 | 11.1 |
| PARTIALLY AGREE | 10 | 55.6 | 8 | 44.4 | 6 | 33.4 |
| DISAGREE | 7 | 38.9 | 7 | 38.9 | 10 | 55.5 |
| UNDECIDED | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | <u>18</u> | <u>100.0%</u> | <u>18</u> | <u>100.0%</u> | <u>18</u> | <u>100.0%</u> |

COMMENTS

- Very difficult to analyze all costs, but many costs are apparent.
- On-the-job training very difficult to cost out.
- We don't have an adequate system to measure this.
- Too many fuzzy areas to be very precise.
- You can only document formal training time. Informal training is always used and undocumented.
- You can make a rough estimate only.
- Navy can't define all costs (i.e. what it costs to educate a student) how can it determine investments in people.
- Dollar investments are hard enough to trace and evaluate, let alone intangibles such as OJT.
- Not possible today, due to various funding pots.
- You may well add up all the teaching costs, but this is not necessarily a real indicator of worth.
- There are some intangibles which may be hard to quantify in dollars based upon how well a person does his job versus dollars expended.
- How do you cost counselling and personal instruction?
- Not sure the present cost accounting system would allow this.
- If uniform evaluation and costing system could be established.
- You couldn't get anyone to agree on how to figure the indirect costs.

QUESTION 6

1 - 6 There are no incentives for good human resource management in the Navy.

2 - 6 There are few incentives for good human resource management in the Navy.

3 - 6 Incentives are lacking for good human resource management in the Navy.

| | <u>ROUND 1</u> | | <u>ROUND 2</u> | | <u>ROUND 3</u> | |
|-----------------|----------------|---------------|----------------|---------------|----------------|---------------|
| | <u>No.</u> | <u>%</u> | <u>No.</u> | <u>%</u> | <u>No.</u> | <u>%</u> |
| FULLY AGREE | 2 | 11.1 | 5 | 27.8 | 2 | 11.1 |
| PARTIALLY AGREE | 2 | 11.1 | 6 | 33.4 | 9 | 50 |
| DISAGREE | 13 | 72.3 | 7 | 38.8 | 7 | 38.9 |
| UNDECIDED | 1 | 5.5 | 0 | 0.0 | 0 | 0.0 |
| | <u>18</u> | <u>100.0%</u> | <u>18</u> | <u>100.0%</u> | <u>18</u> | <u>100.0%</u> |

COMMENTS

- Some commanding officers push this, many don't appreciate its significance.

- There are only implicit incentives, i.e. if we do a good job, our job will be easier now (more cooperative) and later (better people to work with).

- There are some, but should be more, it is an individual thing. Some people seize a problem as an opportunity, others bitch about it.

- Incentives are improved personnel performance and morale.

- While there are some incentives, albeit, few are emphasized.

- The primary incentives are retention and attraction to the Navy.

- Fitness reports under leadership and reenlistments.

- Good human resource management displays itself in better performance by the organization. This will receive favorable notice.

- Some good programs going but need more.

- No relationship between people and mission/dollars introduced into the system as devised now.

- If people weren't taken care of the job wouldn't get done.

- While there are some rewards, promotion, etc., there are few penalties for poor performance in this area.

QUESTION 7

1 - 7 As a manager you have no control over personnel investments made in the Navy.

2 - 7 As a manager you have little control of personnel investments made by the Navy.

3 - 7 As a manager you have much control over personnel investments made by the Navy.

| | <u>ROUND 1</u> | | <u>ROUND 2</u> | | <u>ROUND 3</u> | |
|-----------------|----------------|---------------|----------------|---------------|----------------|---------------|
| | <u>No.</u> | <u>%</u> | <u>No.</u> | <u>%</u> | <u>No.</u> | <u>%</u> |
| FULLY AGREE | 3 | 16.7 | 2 | 11.1 | 2 | 11.1 |
| PARTIALLY AGREE | 5 | 27.8 | 6 | 33.4 | 2 | 11.1 |
| DISAGREE | 10 | 55.5 | 10 | 55.5 | 14 | 77.8 |
| UNDECIDED | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | <u>18</u> | <u>100.0%</u> | <u>18</u> | <u>100.0%</u> | <u>18</u> | <u>100.0%</u> |

COMMENTS

- Must be decided on at CNO, SecNav, OMB and DOD levels.
- Schools, time off, how men are treated are within control of manager.
- Some control, but not enough.
- Have some control by being able to affect training and school assignments through endorsements on requests.
- You control only those assigned to you, no control over accessions.
- Lower level officers have no control.
- A commanding officer has some control over reenlistments.
- You can ensure that personnel are trained and educated, not only for the Navy but for society as a whole.
- One can always influence the individual below him.
- The manner in which individuals manage automatically influences control of investments.
- Part of the manager's job.
- Middle managers have little control.
- Initial costs are not controllable.

QUESTION 8

Command policies may have an adverse influence on replacement costs for the Navy's human resources.

| | <u>ROUND 1</u> | | <u>ROUND 2</u> | | <u>ROUND 3</u> | |
|-----------------|----------------|---------------|----------------|---------------|----------------|---------------|
| | <u>No.</u> | <u>%</u> | <u>No.</u> | <u>%</u> | <u>No.</u> | <u>%</u> |
| FULLY AGREE | 11 | 61.1 | 16 | 88.9 | 17 | 94.5 |
| PARTIALLY AGREE | 3 | 16.6 | 2 | 11.1 | 1 | 5.5 |
| DISAGREE | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| UNDECIDED | 4 | 22.3 | 0 | 0.0 | 0 | 0.0 |
| | <u>18</u> | <u>100.0%</u> | <u>18</u> | <u>100.0%</u> | <u>18</u> | <u>100.0%</u> |

COMMENTS

- Command policies could possibly have an influence, but not likely.

- Mission may also have an effect.

- There are many reasons for adverse influence and I do not have enough information to make a judgment as to why or what they are.

QUESTION 9

1 - 9 Having personnel replacement costs available to you would assist you in being a more effective manager.

2 - 9 You would be a more effective human resource manager if personnel replacement costs were made available to you.

3 - 9 As a Naval manager personnel replacement costs would assist you in being a more effective manager.

| | <u>ROUND 1</u> | | <u>ROUND 2</u> | | <u>ROUND 3</u> | |
|-----------------|----------------|---------------|----------------|---------------|----------------|---------------|
| | <u>No.</u> | <u>%</u> | <u>No.</u> | <u>%</u> | <u>No.</u> | <u>%</u> |
| FULLY AGREE | 8 | 44.4 | 6 | 33.4 | 7 | 38.9 |
| PARTIALLY AGREE | 4 | 22.3 | 8 | 44.4 | 8 | 44.4 |
| DISAGREE | 5 | 27.8 | 3 | 16.7 | 3 | 16.7 |
| UNDECIDED | 1 | 5.5 | 1 | 5.5 | 0 | 0.0 |
| | <u>18</u> | <u>100.0%</u> | <u>18</u> | <u>100.0%</u> | <u>18</u> | <u>100.0%</u> |

COMMENTS

- If I had the time to spend budgeting for and had a human resource funds manager.

- Costs may not be the driving force in some cases.

- If the manager is educated as to what the costs mean.

- Costs are not the only factor in being a good manager.

- Personnel replacement costs are impossible to ascertain.

- Replacement costs might make you more aware of the costs involved, but would not make you a better manager.

- Replacement costs are not necessarily a yardstick of an individuals worth to the Navy.

- Unless you know what to do with this information and how to do it, it's worthless.

- If you know what they mean and have some control over their use.

- Monetary savings are an incentive.

- This is not the only factor involved in human resource management.

- Must get agreement on indirect costing.

QUESTION 10

The Navy spends a lot of money on candidates for commissioning in the Navy. What do you estimate are the pre-commissioning costs for each of the below listed programs?

NAVAL ACADEMY in (000\$) N=18

| | Low | | Mid Estimate | | High | |
|---------|-------|--------------------|--------------|--------------------|--------|--------------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| | | | | | | |
| Round 1 | 44.94 | 2.6044 | 74.33 | 5.7469 | 118.88 | 9.1360 |
| Round 2 | 45.27 | 6.4278 | 81.22 | 2.7858 | 157.5 | 7.9912 |
| Round 3 | 43.61 | 2.7199 | 64.27 | 4.4273 | 89.44 | 5.6478 |

NROTC SCHOLARSHIP

| | Low | | Mid Estimate | | High | |
|---------|-------|--------------------|--------------|--------------------|-------|--------------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| | | | | | | |
| Round 1 | 19.38 | 2.7584 | 32.94 | 1.6817 | 50.94 | 3.2538 |
| Round 2 | 19.66 | 4.1986 | 36.77 | 2.1880 | 60.50 | 2.8010 |
| Round 3 | 20.27 | 1.2862 | 38.33 | 1.5328 | 46.11 | 2.3213 |

OCS

| | Low | | Mid Estimate | | High | |
|---------|------|--------------------|--------------|--------------------|-------|--------------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| | | | | | | |
| Round 1 | 7.94 | 2.1604 | 15.22 | 7.5589 | 24.88 | 2.7162 |
| Round 2 | 8.77 | 3.0585 | 18.88 | 4.6971 | 29.11 | 1.3392 |
| Round 3 | 6.91 | 5.8567 | 13.66 | 1.2230 | 21.66 | 1.6719 |

QUESTION 11

At the end of four years of Naval Service, how much do you estimate that the Navy has spent to train a surface officer for each of the programs listed below ?

NAVAL ACADEMY in (000\$) N=18

| | Low | | Mid Estimate | | High | |
|---------|-------|--------------------|--------------|--------------------|--------|--------------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| | | | | | | |
| Round 1 | 84.75 | 4.4156 | 132.94 | 2.4104 | 203.05 | 2.5406 |
| Round 2 | 53.88 | 4.6142 | 113.61 | 1.3127 | 193.61 | 1.9847 |
| Round 3 | 65.83 | 3.1071 | 106.39 | 6.0567 | 148.05 | 9.8778 |

NROTC SCHOLARSHIP

| | Low | | Mid Estimate | | High | |
|---------|-------|--------------------|--------------|--------------------|--------|--------------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| | | | | | | |
| Round 1 | 69.47 | 9.8594 | 102.5 | 1.5823 | 173.05 | 2.0923 |
| Round 2 | 38.89 | 3.4593 | 69.72 | 4.9332 | 131.39 | 2.6558 |
| Round 3 | 47.22 | 3.2899 | 80.55 | 5.9653 | 105.28 | 5.7992 |

OCS

| | Low | | Mid Estimate | | High | |
|---------|-------|--------------------|--------------|--------------------|--------|--------------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| | | | | | | |
| Round 1 | 54.58 | 7.3086 | 88.61 | 7.5698 | 140.27 | 1.5862 |
| Round 2 | 32.17 | 9.9044 | 53.83 | 4.1074 | 93.89 | 1.1818 |
| Round 3 | 36 | 2.7793 | 54.17 | 4.3190 | 81.94 | 6.2233 |

QUESTION 12

What do you estimate it costs to enlist one Navy recruit ?

Cost Per Recruit in (000\$) N=18

| | Low | | Mid Estimate | | High | |
|---------|------|--------------------|--------------|--------------------|------|--------------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| | | | | | | |
| Round 1 | 1.31 | 7.5242 | 2.97 | 2.6738 | 4.93 | 5.7991 |
| Round 2 | 1.04 | 2.2232 | 2.78 | 5.4312 | 5.47 | 3.1614 |
| Round 3 | 1.01 | 1.3540 | 1.83 | 6.6612 | 3.08 | 5.9871 |

QUESTION 13

To replace one surface line officer at the end of his obligated service costs _____ ? for each program listed below ?

NAVAL ACADEMY in (000\$) N=18

| | Low | | Mid Estimate | | High | |
|---------|-------|--------------------|--------------|--------------------|--------|--------------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| | | | | | | |
| Round 1 | 84.72 | 4.7665 | 154.05 | 6.5541 | 208.33 | 6.6654 |
| Round 2 | 100 | 7.6058 | 178.33 | 8.7312 | 260 | 2.9195 |
| Round 3 | 74.47 | 5.4394 | 109.16 | 6.4135 | 181.11 | 9.3140 |

NROTC SCHOLARSHIP

| | Low | | Mid Estimate | | High | |
|---------|-------|--------------------|--------------|--------------------|--------|--------------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| | | | | | | |
| Round 1 | 60.55 | 4.8564 | 111.66 | 1.4291 | 172.5 | 2.7827 |
| Round 2 | 77.22 | 1.4451 | 135.83 | 4.6224 | 231.11 | 2.4825 |
| Round 3 | 59.30 | 4.3554 | 100.11 | 8.0759 | 152.39 | 1.4170 |

OCS

| | Low | | Mid Estimate | | High | |
|---------|-------|--------------------|--------------|--------------------|--------|--------------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| | | | | | | |
| Round 1 | 48.72 | 1.4758 | 95.33 | 2.4733 | 151.66 | 4.9113 |
| Round 2 | 49.89 | 1.2342 | 96.11 | 4.3371 | 141.27 | 1.3234 |
| Round 3 | 48.31 | 3.0056 | 85.94 | 6.8877 | 152.78 | 6.1739 |

QUESTION 14

What percentage of the Navy's FY-75 budget will be spent on personnel?

NAVY PERSONNEL COSTS (in %)

N=18

| | Low | | Mid Estimate | | High | |
|---------|-------|--------------------|--------------|--------------------|-------|--------------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| Round 1 | 42.83 | 1.7440 | 57.77 | 2.8451 | 69.44 | 3.5373 |
| Round 2 | 35.88 | 6.6541 | 50 | 2.4448 | 59.61 | 3.0818 |
| Round 3 | 36.77 | 3.2387 | 54.17 | 2.3208 | 64.16 | 3.3451 |

QUESTION 15

What percentage of the Navy's FY-75 budget will be spent on training?

TRAINING COST FY-75 (in %)

N=18

| | Low | | Mid Estimate | | High | |
|---------|-------|--------------------|--------------|--------------------|-------|--------------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| Round 1 | 13.55 | 1.7945 | 23.22 | 2.1261 | 30.33 | 1.4330 |
| Round 2 | 11.05 | 1.0026 | 19.17 | 8.5987 | 27.05 | 1.2640 |
| Round 3 | 6.55 | 1.5403 | 12.61 | 3.8714 | 19.17 | 1.1806 |

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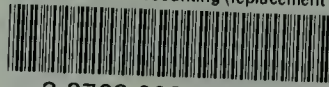
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